

# 8-Port, 4x InfiniBand Switch (HDMP-2840)

## Product Overview

### Features

#### Hardware:

- 8 Independent InfiniBand data ports supports the 4x or 1x InfiniBand links
- Aggregate switch bandwidth of 160 Gbps and aggregate switch data rate of 128 Gbps
- Each 4x port supports bit rates up to 10 Gbps in each direction allowing a 16 Gbps full duplex data rate per port
- Integrated SerDes for reduced system cost, power consumption, and latency
- Unloaded full-through switch latency of 110 ns including integrated SerDes
- Fully non-blocking internal switch architecture and support for cut-through, and store and forward switching algorithms
- Support for both Unicast and Multicast packets
- Unicast forwarding table size of 16k entries
- Multicast forwarding table of 512 entries
- Error handling and packet checking for all data, link and management packets in hardware including ICRC, check and generation for management packets
- Internal SRAM for packet buffering and queuing
- Programmable Virtual Lanes (VLs)
- Programmable partition key checking: check inbound packets only, outbound packets only, both inbound and outbound packets, or disable checks
- Support for 16 partition keys per port
- Integrated CPU interface to support optional external processor for advanced management functionality
- I<sup>2</sup>C support for system configuration via external NVRAM, system bringup and system diagnostics
- IEEE 1149.1 TAP compliance
- Implemented in 0.18 micron 1.8V, 6 metal layer process technology
- 400-pin 22 mm ceramic BGA FlipChip package

### Applications

- Storage Area Networks (SAN)s
- Servers and workstations
- Clustering
- I/O adapters
- Data networks
- High speed backplanes

#### Software:

- Feature-rich management capabilities including on-board SMA, PMA and BMA
- Supports extended management functionality such as SNMP tunneling and subnet management, via the CPU interface to an optional external processor
- SMA support for SMP traffic and pass-thru SMP traffic as well as trap and notice queue management
- Support for all required InfiniBand performance and diagnostic counters
- Supports vendor-specific configuration and programming

#### InfiniBand:

- Compliant with InfiniBand architecture specification 1.0a requirements
- Exceeds or conforms to IBTA profiles A and B



**Agilent Technologies**

## Description

The HDMP-2840 is a highly integrated, cost effective 8-port 4x-channel switching solution.

Each port can run at 4x or 1x operating mode, which is defined as four pairs of full-duplex differential signals, or one pair of full-duplex differential signals, respectively.

The HDMP-2840 combines SerDes (SERializer-DESerializer) technology with additional logic to support a 2.0 Gbps InfiniBand data rate (2.5 GHz signaling).

Each port contains an independent Physical layer (Phy) and Link. The SerDes Phy block includes the analog transceiver through "8B/10B" encoding/decoding logic and elastic buffers for rate matching and lane de-

skew. The Phy transmitter block accepts 8-bit wide parallel data and serializes this data into a high-speed serial data stream. The high-speed outputs are capable of interfacing directly to connectors and copper cables for electrical transmission or to fiber-optic modules for optical transmission.

The Phy/Link block completes the required Phy functionality and provides an interface to the Data Link layer. This block contains the sync and idle character insertion, Phy training controller, and character recognition logic.

The InfiniBand specified Link block supports programmable Virtual Lanes (VLs) and other functions such as link state and status, error detecting and

recording, flow control generation, and output buffering.

The input Virtual Lanes (VLs) within the Link are configurable to a programmable number of VLs and Maximum Transfer Units (MTUs) to support either one or two VLs at 4096 MTUs, or four VLs at 2048 MTUs, or eight virtual lanes at 1024 MTUs.

The HDMP-2840 Crossbar is designed with input buffers that can be drained faster than they can be filled. Each of the HDMP-2840's eight ports is treated in identical fashion in the crossbar. The Crossbar includes two additional internal ports for InfiniBand Management and internal BIST/POST.

The Management block includes agents for various programming, quality of service, performance monitoring, and error detecting services. These agents include PMA, the Performance Management Agent SMA, and BMA, the Baseboard Management Agent.

The HDMP-2840 can be configured to use an external processor for management-related functions that may be implemented in firmware. The CPU interface sends and receives both general service management and subnet management traffic in addition to other capabilities such as on chip initialization and diagnostics.

The HDMP-2840 requires an external differential clock generator at 62.5 MHz as reference clock. All internal clocks, including the transmit Phy clocks, are synthesized from this reference clock per the InfiniBand specification.

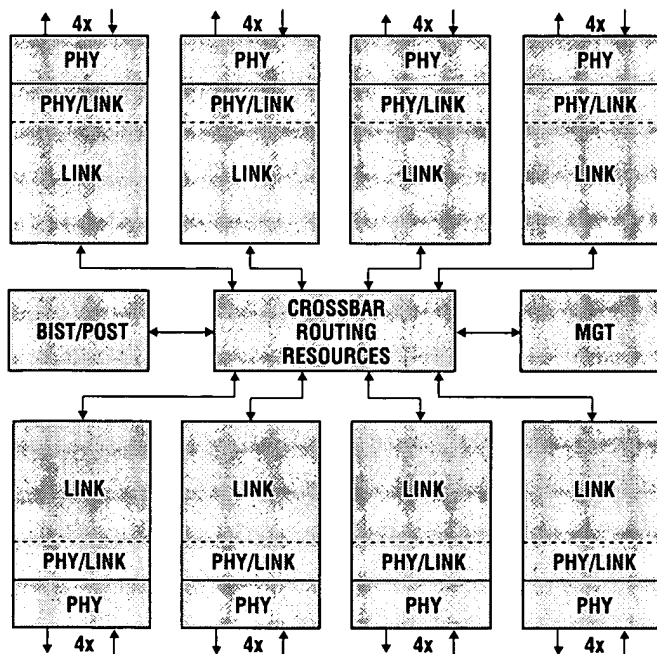


Figure 1. HDMP-2840 Functional Block Diagram.

For product information and a complete list of Agilent contacts and distributors, please go to our web site.

[www.agilent.com/semiconductors](http://www.agilent.com/semiconductors)

E-mail: [SemiconductorSupport@agilent.com](mailto:SemiconductorSupport@agilent.com)

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June 11, 2003

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# Comparison with InfiniBand SDP

- SDP is on iWARP over TCP, rather than Reliable Connected RDMA on InfiniBand
  - Semantics of both RDMA infrastructures are similar, except iWARP Invalidate capability
    - Invalidate for SDP on iWARP is optional - receiver must support the Remote Peer not using the invalidate.
    - This allows interoperability with SDP on InfiniBand
- SDP on iWARP can cross the Internet
  - SDP Port Mapper solves crossing multiple subnets
  - SDP on InfiniBand is limited to a single subnet
- SDP on iWARP and SDP on InfiniBand are designed to be interoperable
  - SDP Messages after connection setup are exactly the same
    - Including SDP Modes, Data Transfer Mechanisms, Socket cloning, Connection Teardown
  - SDP connection setup is different (next slide)

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13 November 2001

## QLogic has iSCSI, InfiniBand and Fibre Channel products

QLogic has introduced products for iSCSI, Fibre Channel, and InfiniBand (IB) connectivity. Specifically, it launched four SANblade adapters, including single channel and dual channel 2Gb PCI-Fibre Channel host bus adapters, a single channel PCI-iSCSI host bus adapter, and an InfiniBand-Fibre Channel I/O Module, along with new SANbox switch management software for monitoring and controlling multi-vendor Fibre Channel networks.

Not surprisingly, they're all claimed to work seamlessly with each other.

SANblade QLA4000 Series iSCSI adapters are designed to connect cPCI-based servers with forthcoming iSCSI storage devices using existing Ethernet. By offloading the host of protocol processing, the new host bus adapter (HBA) provides Fibre Channel SAN performance on Ethernet without burdening the host system.

The SANblade QIB2342 is an InfiniBand Architecture to Fibre Channel I/O module, designed to connect forthcoming InfiniBand servers to Fibre Channel storage. Packaged in a standard InfiniBand form factor, the new module features dual independent 2Gbps Fibre Channel ports and a 4x InfiniBand backplane connection.

It's designed for compatibility with all InfiniBand Architecture-compliant products. Connecting 2Gbps Fibre Channel SANs to 2.5Gbps InfiniBand ports at full throughput, the module is also backward-compatible with 1Gbps Fibre Channel devices.

Meanwhile, the QCP2212 dual channel 1Gbps SANblade cPCI host bus adapter is for Sun Fire servers. The 2Gbps cPCI SANblade QCP2330 and QCP2332 provide Sun administrators with backwards compatibility with 1Gbps storage systems and connectivity to new 2Gbps storage systems.

The products also allow Sun administrators to tailor the products for cost or performance, by choosing a single channel cPCI adapter or a cPCI adapter with dual 400Mbyte Fibre Channel ports. All cPCI adapters can be hot-swapped.

The latest version of SANbox switch management software features a SAN topology graphical display that shows all the links across the entire fabric, and provides drag-and-drop zoning and alerts of any switch failures.

The software's fabric tree display allows administrators to use single-click navigation to view individual components, and it permits the administrator to see the overall status of multiple switches and fabrics while simultaneously editing a switch's configuration.

It can export name server data and alarms to a file, and can import and export zoning data between switches. It also lets users update status and configuration displays for SANbox switches.

Available now, prices weren't announced.

Separately, the company announced that its 2Gbps SANblade host bus adapters and SANbox switches are certified with LSI Logic Storage Systems' new MetaStor E4600 2Gb storage system, and will be available as part of a complete 2Gbps storage system.

The E4600 supports up to four concurrent 2Gbps Fibre Channel host connections, allowing QLogic's products to connect multiple-vendor servers at higher transfer rates to the E4600, which scales from 36GB to 39TB.

Web address: <http://www.lsillogicstorage.com> Web address: <http://www.qlogic.com>

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SANs and Storage Networks, Report



### InfiniBand Technology

The ongoing explosion of data movement is beginning to cause system bus technologies to re-examine terms of bandwidth. Common PCI buses can only support up to 133 MB/sec. across all PCI slots. The 64-bit, 66 MHz buses available in high-end PC servers, 566 MB/sec of shared bandwidth is what you can hope for. To counter this, a new standard, InfiniBand, based on switched serial links to devices, is currently in development.

InfiniBand, a channel-based interconnect technology developed by members of the InfiniBand Trade Association, which include the large server vendors Intel Corp., Dell, Sun Microsystems, Compaq, Microsoft, and HP, provides an ideal high-speed switched architecture for server clustering, and a high-speed server interface to SANs and local area networks (LANs).

To make things work, InfiniBand identifies four types of devices: a Host Channel Adapter (HCA), a Target Channel Adapter (TCA), a switch and a router. A host channel adapter (HCA) is implemented within a workstation serving as a host system, while a target channel adapter (TCA) goes into the client system. These are connected with serial links either directly or through a switch. Devices on an InfiniBand network are primarily connected through switches and routers to several hosts. A switch will interconnect and pass data packets between various ports, while a router interconnects several switches and connects to the local area. All InfiniBand devices are thus connected in a fabric.

ATTO Technology, a global leader in Fibre Channel and SCSI storage connectivity, will debut its initial InfiniBand products in 2003. ATTO's initial InfiniBand products will provide InfiniBand to Fibre Channel connectivity, enabling InfiniBand switches to connect to Fibre Channel SANs. With over 40 years of storage connectivity products for both Fibre Channel and SCSI, InfiniBand is a natural progression for ATTO.

ATTO will initially develop target channel adapters (TCA), which will enable customers to connect their devices to SANs using the same technology ATTO uses in today's PCI-based systems. These adapters will provide 2.5 Gb/s InfiniBand and 2Gbs Fibre Channel connectivity. ATTO also plans to announce other InfiniBand products such as an IB to FC router.

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## HCA Board Products

- InfiniHost III Ex MemFree HCA
- InfiniHost III Ex HCA
- InfiniHost Low Profile HCA
- InfiniHost HCA
- Product Selector

## Balanced Compute Architecture

- [Bandwidth Benefits](#)



10 Gb/sec (4X) InfiniBand™

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## Host Channel Adapters

Mellanox offers dual port InfiniBand Host Channel Adapters (HCAs) with PCI Express interface. Designed to deliver the full performance of high-speed InfiniBand fabrics, feature flexible architecture that achieves an optimal balance of cost/performance and supports both low latency clustering, as well as, applications requiring high throughput and scalable connectivity. Mellanox InfiniBand HCAs are fully autonomous and capable of multiple I/O operations and associated data transfers without host intervention. The architecture fully supports the Virtual Interface Architecture and allows the de-coupling of CPU from I/O operations. HCA operation without external memory offers a lower system point, lower power and a smaller overall footprint.

The InfiniBand architecture defines and supports many applications, most taking advantage of RDMA capabilities. This dexterity enables high performance clustering, communicating storage traffic to be run over a common InfiniBand fabric. These HCA cards feature that supports the following protocols: MPI (for HPC clusters), UDAPL (for databases), legacy socket applications), IPoIB (Internet Protocol over InfiniBand), NFS over RDMA, network attached storage), SRP (for block storage), and many embedded applications including video streaming, aerospace, military, and electronic controls.

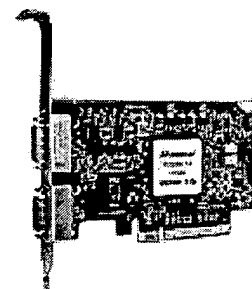
[InfiniHost™ III HCA Architecture](#) - The Driving Force for PCI Express™ Delivering C of Bandwidth

## MHEA28-XT

Dual Port 10Gb/sec PCI Express™ MemFree Channel Adapter PCI Express x8

[Mellanox Launches The World's Smallest 10Gb/s Adapter](#)

[InfiniHost III Ex MemFree HCA Product Overview](#)



## Key Features

- Dual 10 Gb/s (4X) InfiniBand Ports
- Integrated Serializer/Deserializer (SerDes)
- InfiniRISCTM Embedded RISC Processor
- PCI Express Revision 1.0a Compatible Card
- PCI Express x8 (20 + 20Gb/s Full Duplex)
- IBTA version 1.1 interoperability
- Dual Copper Connectors (Amphenol) with media detect circuitry

## Software Support

- InfiniHost III Ex Linux Drivers and Windows 2003
- InfiniBand Compatible Verbs API
- Linux management and applications package available
- OEM Labeling Options

## Board Characteristics

- Power: ~5.5 Watts
- Card Form Factor: Low Profile card. 117mm x 69mm
- Requires 4X InfiniBand cable(s) (not included)
- Link status indication LED
- Serial EEPROM for Vital Product Data
- Regulatory Compliance Testing CE, FCC, general availability
- ISO 9002 Qualified Manufacturing

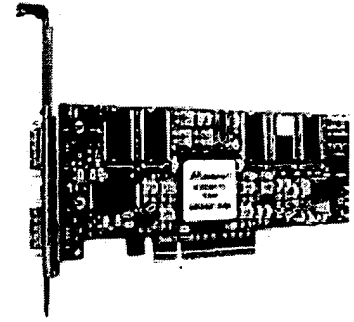
## Applications

- Clustered Database
- Application Servers
- High Performance Compute Clusters
- Storage Platforms

**MHEL-CFXXX-T (previously MTLP25208)**  
Dual Port 10Gb/sec PCI Express™ Channel Adapter  
PCI Express x8

Mellanox Technologies Delivers 3rd Generation  
InfiniBand HCA for PCI-Express

InfiniHost III Ex HCA Product Overview



**Application Support**

- DAPL (Direct Access Programming Library) for Data Base Applications
- SDP runs existing applications without modification
- IPoIB (Internet Protocol over InfiniBand) runs IP over InfiniBand links
- NFS over RDMA (Network File System) for NAS storage
- SRP (SCSI RDMA Protocol) for SAN storage
- Embedded Application Support for Aerospace, Military, Electronic Controls

**InfiniBand Features**

- Dual 10Gb/s InfiniBand 4X Ports
- IBTA v1.1 Compatible Design
- Supports Millions of Queue Pairs
- InfiniRISC™ III Embedded RISC Processor
- Large On-chip InfiniBand Port Buffer
- Low Latency Transport
- Memory Options of 128, 256 or More Memory
- InfiniBand Native Layer 4 Hardware Acceleration
- Support for Eight Data VLs plus the Management Lane
- Sophisticated Quality of Service (QoS)
- Multicast, Atomic and Large Message
- Hardware Support for UC, UD, RC and Mechanisms

**Bandwidth**

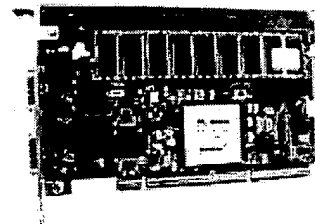
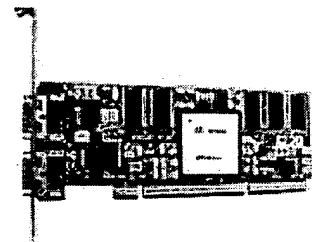
- 20+20 Gb/s Full Duplex InfiniBand Bandwidth
- 20+20 Gb/s Full Duplex PCI Express Bus Bandwidth

**MHXL-CFXXX-T (previously MTLP23108)**  
InfiniHost Dual Port 10Gb/sec PCI-X Low Profile  
Host Channel Adapter Card

Mellanox Technologies Announces Complete PCI-  
Express™ HCA Product Line at Intel® Developer  
Forum

**MTPB23108**  
InfiniHost Dual Port 10Gb/sec PCI-X Host Channel  
Adapter Card

InfiniHost InfiniBand PCI-X HCA Cards Product  
Overview



**Application Support**

- DAT (Direct Access Transport) for Data Base Applications
- SDP runs existing applications without modification

**InfiniBand Features**

- Dual 10Gb/s InfiniBand 4X Ports
- IBTA v1.1 Compatible Design
- Supports Millions of Queue Pairs
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  - InfiniBand Native Layer 4 Hardware Acceleration
  - Support for Eight Data VLs plus the \ Management Lane
  - Sophisticated Quality of Service (QoS)
  - Multicast, Atomic and Large Message
  - Hardware Support for UC, UD, RC and Mechanisms
- Bandwidth
- 20+20 Gb/s Full Duplex InfiniBand Bandwidth
  - 8.5 Gb/s PCI-X Bus Bandwidth

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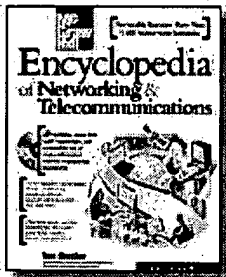
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InfiniBand is a new device interconnect technology that was developed by the IBTA (InfiniBand Trade Association) in association with Compaq, Dell, Hewlett-Packard, IBM, Intel, Microsoft, Sun Microsystems, and other industry leaders. The architecture is a switched fabric with a packet-switching communication protocol. It also specifies links, host channel adapters, and adapter form factors.

InfiniBand evolved from previous work with I/O architectures called Future I/O and NGIO (Next-Generation I/O). These two were combined into System I/O and then redefined again into InfiniBand. The architecture was designed with multivendor interoperability in mind. It draws on the success of previous switched fabric architectures such as Fibre Channel.

This topic continues in "[The Encyclopedia of Networking and Telecommunications](#)."

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# InfiniBand

Last modified: Thursday, January 29, 2004

Both an I/O architecture and a specification for the transmission of data between processors and I/O devices that has been gradually replacing the PCI bus in high-end servers and PCs. Instead of sending data in parallel, which is what PCI does, InfiniBand sends data in serial and can carry multiple channels of data at the same time in a multiplexing signal.

The principles of InfiniBand mirror those of mainframe computer systems that are inherently channel-based systems. InfiniBand channels are created by attaching host channel adapters (HCAs) and target channel adapters (TCAs) through InfiniBand switches. HCAs are I/O engines located within a server. TCAs enable remote storage and network connectivity into the InfiniBand interconnect infrastructure, called a *fabric*. InfiniBand architecture is capable of supporting tens of thousands of nodes in a single subnet.

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*InfiniBand* is a trademarked term. The technology is a result of the merger of two competing designs -- *Future I/O*, which was developed by Compaq, IBM and Hewlett-Packard, and *Next Generation I/O*, which was developed by Intel, Microsoft and Sun Microsystems. *InfiniBand* was previously called *System I/O*.

InfiniBand transmission rates begin at 2.5GBps.

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### An Introduction to the InfiniBand Architecture 🚀

This article reviews each of the main architectural features of the InfiniBand as a solution to the corresponding limitation of current I/O subsystems.

### InfiniBand Trade Association 🚀

Specifications and downloads, membership information, news, conferences and events and an InfiniBand FAQ.

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[www.rdmaconsortium.org/home/SDP\\_tutorial\\_v1.0d.pdf](http://www.rdmaconsortium.org/home/SDP_tutorial_v1.0d.pdf) - October 31, 2003 - 260 KB

2. [Sockets Over Infiniband \\(\SoIB\\)](#)

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[www.infinibandta.org/events/past/spring2002/2\\_Sockets\\_Direct\\_Protocol.pdf](http://www.infinibandta.org/events/past/spring2002/2_Sockets_Direct_Protocol.pdf) - March 28, 2003 -

3. [EDN: Bladerunners: serving remote data | KeepMedia](#)

KeepMedia Free Trial. Bladed servers promise lower cost, higher density, **and** increased reliabil with the enormous network-**data**-delivery requirements of next-generation digital devices. ....  
[www.keepmedia.com/pubs/EDN/2002/09/26/241729?extID=10032&oliID=213](http://www.keepmedia.com/pubs/EDN/2002/09/26/241729?extID=10032&oliID=213) - January 5, 2001

4. [VMI and MPICH-VMI Bandwidth](#)

Virtual Machine Interface 2.0. VMI **and** MPICH-VMI **Bandwidth**. The VMI **bandwidth data** gra for each kind of interconnect was measured using the **bandwidth** benchmark installed in the b  
[vmi.ncsa.uiuc.edu/performance/vmi\\_bw.php](http://vmi.ncsa.uiuc.edu/performance/vmi_bw.php) - April 26, 2004 - 27 KB

5. [Infinicon - Glossary](#)

As a leading developer of **InfiniBand**-enabled Shared I/O **and** Clustering Systems, InfiniCon S a resource center with a wide array of information concerning **Infiniband**, Shared I/O, **and** the  
[www.infiniserv.org/resource/glossary.asp](http://www.infiniserv.org/resource/glossary.asp) - January 17, 2005 - 82 KB

6. [Byte and Switch - The Global Site For Storage Networking](#)

... **InfiniBand**, the University of Washington is looking to use the technology as a high-speed f **stream** multimedia **data** ... of low latency **and** high **bandwidth** makes it a perfect ...  
[www.byteandswitch.com/document.asp?doc\\_id=23931](http://www.byteandswitch.com/document.asp?doc_id=23931) - January 8, 2005 - 51 KB

7. [8-Port, 4x InfiniBand Switch \(HDMP-2840\)](#)

... 8 Independent **InfiniBand data** ports ... Aggregate switch **bandwidth** of. 160 Gbps **and** a switch ... high-speed serial **data stream**. The high-speed outputs are ...  
[www.wolf.agilent.com/litweb/pdf/5988-7782EN.pdf](http://www.wolf.agilent.com/litweb/pdf/5988-7782EN.pdf) - June 13, 2003 - 60 KB

8. [TechOnLine - Transparent Generic Framing Procedure \(GFP\)](#)

... Ethernet, ESCON, SBCON, Fiber Channel, FICON, **and** **Infiniband**. These have become incre found in the **data stream**, resulting in a non-deterministic **bandwidth** expansion. ...  
[www.techonline.com/community/ed\\_resource/feature\\_article/21341\\_\\_XS214493246](http://www.techonline.com/community/ed_resource/feature_article/21341__XS214493246) - January 11, 2005 - 1 KB

9. [Libra Networks Ethernet-to-Infiniband Gateway](#)

... networks **and** servers **and** next generation. **InfiniBand**\_ Architecture **data** centers ... per s **Bandwidth** support for 4x1GbE ingress **and** ... **and** is focused on a socket **stream** transfer ...  
[www.teja.com/content/Ethernet\\_Infiniband\\_CS.pdf](http://www.teja.com/content/Ethernet_Infiniband_CS.pdf) - November 27, 2003 - 433 KB

#### 10. EE Times -**Infiniband** requires design trade-offs


EE TIMES NETWORK. ELECTRONICS GROUP SITES. **Infiniband** requires design trade-offs. By [ for higher **bandwidth**, 24/7 ... **Infiniband** signaling has its clock signal embedded in **data**, an bit encoding is used to remove dc offset from the **data stream** ...  
www.eetimes.com/story/OEG20001023S0052 - January 10, 2005 - 57 KB

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www.elinuxapps.com/links5.htm - November 29, 2004 - 71 KB

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Blocks. Block 1. Block 2 5/17. Block 3. Block 4. Block 5. Block 6. Block 7 6/5 NSM Field Service iSCSI/SV  
www.san-ip.com/links5.htm - October 17, 2002 - 60 KB

3. [Infinicon - Glossary](#)

As a leading developer of **InfiniBand**-enabled Shared I/O **and** Clustering Systems, InfiniCon S a resource center with a wide array of information concerning **Infiniband**, Shared I/O, **and** the  
www.infiniserv.org/resource/glossary.asp - January 17, 2005 - 82 KB

4. [GEF's Storage Channel - SAN NAS SAS SCSI iSCSI Backup Recovery Data...](#)

GEF - The Storage Networking Source. for Executives, VCs, Procurement Managers **and** Engine one-stop Storage Networking source for News, White Papers, ... **and** through its worldwide par **channel**. Cisco currently ... a centralized **data** storage solution that will **stream** multiple high protects **host**-based systems **and** user workstations ...  
www.globalexecutiveforum.net/Storage.htm - January 14, 2005 - 519 KB

5. [Libra Networks Ethernet-to-Infiniband Gateway](#)

... networks **and** servers **and** next generation. **InfiniBand**\_ Architecture **data** centers ... **and** a socket **stream** transfer ... Protocol (SDP) stack, **and Host Channel Adapter** (HCA) driver ..  
www.teja.com/content/Ethernet\_Infiniband\_CS.pdf - November 27, 2003 - 433 KB

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Please keep sorted. # ... pciids.sf.net/. New **data** are always # welcome (if ... TL Fibre **Channel Adapter** 1029 Tach XL2 Fibre **Channel Host Adapter** 107e 000f Interphase ...  
cvsweb.xfree86.org/cvsweb/xc/programs/Xserver/hw/xfree86/etc/pci.ids?rev=1. - January 9, 20

7. [LeCroy Introduces Top End Digital Oscilloscope and Serial Data...](#)

LeCroy Corporation introduces the model 8620A oscilloscope, **and** SDA 6020 Serial **Data** Analy flagship instruments based on its innovative WaveMaster digital oscilloscope (DSO) platform. ..  
www.lecroy.com/ProductPress/FY04/070103-a.asp - January 6, 2005 - 48 KB

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INTERNET-DRAFT M. ... such as Fibre **Channel**, Ethernet, **InfiniBand**, **and** proprietary fabrics **Adapter Channel Adapter** is a **host**-resident device that ... actual user **data** from the **stream**

quimby.gnus.org/internet-drafts/draft-wittle-dafs-00.txt - September 8, 2001 - 524 KB

9. 2001, June - week 3, news archive on STORAGEsearch.com

... **Host Channel** Adaptor (HCA), Target **Channel** Adaptor (TCA) and **InfiniBand** ... **Data** rec  
services. DVD drives. Enclosures. Events & trade shows. Fibre-**channel adapter** ... a **stream** c  
www.storagesearch.com/news2001-june3.html - June 25, 2001 - 68 KB

10. Arapahoe and HyperTransport Data Buses


Arapahoe and HyperTransport **Data** Buses ... connection includes a **host** bridge and several t  
points ... can divide a **data stream** from peripherals according ... the **InfiniBand** bus (1.25 MI  
www.digit-life.com/articles/arapahoevshypertransport - December 13, 2004 - 30 KB

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[www.sbs.com/products/572](#) - January 13, 2005 - 26 KB

2. **PCI-735 Intelligent InfiniBand Host Channel Adapter**

PCI I/O Controllers. LAN. PCI-735 Intelligent **InfiniBand Host Channel Adapter**. Intelligent **I Host Channel Adapter**. Dual 4X **Infiniband** Channels. Eight Port 1X **infiniband** Switch. 8031  
[www.cyclone.com/products/pci735.htm](#) - October 27, 2004 - 10 KB

3. **InfiniBand Host Channel Adapters - Mellanox Technologies**

... Mellanox offers dual port **InfiniBand Host Channel Adapters** (HCAs) with PCI Express and interface ... sec PCI-X **Host Channel Adapter** Card. InfiniHost **InfiniBand** PCI-X HCA Cards ..  
[www.mellanox.com/products/hca.html](#) - January 11, 2005 - 19 KB

4. **HCA guide - HW only.book**

PCI-to-**InfiniBand Host Channel Adapter**. Installation Guide. JNI Corporation. Document # 3  
 000-Rev. C 6/03. IBP-1x02 **Host Channel Adapter** Installation Guide. 1. Disclaimer  
[www.jni.com/DownloadCount2.cfm?Section=Support&Page=installguides.cfm&File=](#) - November  
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5. **ECN: 10Gb/sec Data Center Performance with InfiniHost | KeepMedia**

... has introduced its second generation **InfiniBand Host Channel Adapter** (HCA) and announ  
 shipments to OEM customers ... port 10Gb/s **InfiniBand host** or target **channel adapter** with  
[www.keepmedia.com/pubs/ECN/2002/07/01/239149?extID=10032&oliID=213](#) - January 6, 2005

6. **Dual port 10Gb/s PCI-X InfiniBand Host Channel Adapter (HCA) is...**

Dual port 10Gb/s PCI-X **InfiniBand Host Channel Adapter** is engineered to drive the full per  
 high speed **InfiniBand** fabrics. Designed to provide high throughput and low CPU utilization re  
 Gb/s high performance computing ... overhead and free **host** processors for application ... Ethe  
**Channel** Graphics HiPPI IEEE 1394 IndustryPack **InfiniBand** MIL-STD ...  
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7. **Mellanox Offers Infiniband Adapter for PCI Express**

Mellanox introduces InfiniHost III Ex **Host Channel Adapter** for forthcoming servers providing  
 slots.  
[www.eweek.com/article2/0%2C1759%2C1528147%2C00.asp](#) - January 7, 2005 - 12 KB

8. **InfiniBand Newsletter - Mellanox Technologies**

... III Ex, third generation PCI Express **InfiniBand Host Channel Adapter** (HCA). This device



perfect ... sec bandwidth between the dual **InfiniBand** ports and the 8X bandwidth of ...  
[www.mellanox.com/Newsletter/Mellanox\\_Newsletter\\_Feb\\_04.html](http://www.mellanox.com/Newsletter/Mellanox_Newsletter_Feb_04.html) - February 10, 2004 - 10 KB

#### 9. Intel Developer Forum plays host to InfiniBand

Last week's Intel Developer Forum served as a showcase for **InfiniBand**, the new bus architect promises to alleviate many of the bottlenecks clogging servers and storage systems today. ... T  
[www.nwfusion.com/news/2001/0305infra.html](http://www.nwfusion.com/news/2001/0305infra.html) - December 11, 2004 - 51 KB

#### 10. Infinicon - Press Release


InfiniCon Systems Expands InfinIO Family of Networking Offerings With Announcement of 10Gb **Channel Adapter** ... includes a dual-ported 4x **InfiniBand Host Channel Adapter** (HCA) tha both PCI and ... ensure a robust **host** environment for its **InfiniBand**-enabled solutions, InfiniC  
[www.infinicon.com/news/pressitem.asp?id=131](http://www.infinicon.com/news/pressitem.asp?id=131) - December 29, 2004 - 23 KB

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